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TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

No. 423

Seed Source and Earliness of Shoot Growth in Young Red Pine Seedlings

That young red pine seedlings of various seed origins differ somewhat in the earliness at which shoot growth begins is indicated by observations made in a forest nursery on the Chippewa National Forest in northern Minnesota.

More than 160 lots of spring-sown seedlings from 8 seed collection regions in the Lake States were examined early in June of their second year in the seedbeds. They were rated from 1 to 5 (fast - 1, medium - 3, slow - 5) according to ocular estimates of the relative amount of terminal bud growth which had taken place. Because of a cold, wet spring, growth was slower than normal in starting. Results of this evaluation show a general trend for earlier beginning of shoot growth among the seed sources from the southern part of red pine's range in the Lake States (see table below). However, there are fast and slow starters from all but one region: there were no fast starting lots of northeastern Minnesota origin.

Seed collection region	Earliness of starting shoot growth: Average rating	Proportion of lots which were- Fast	Medium	Slow	Lots observed
		Percent	Percent	Percent	Number
Central Wisconsin	2.6	33	56	11	18
Brainerd-Cameron	2.9	30	45	25	20
Head-of-the-Lakes	3.2	21	50	29	14
Lower Peninsula of Michigan	3.3	18	49	33	33
Northern Upper Michigan	3.3	5	75	20	20
North-central Minnesota	3.4	10	53	37	19
Northeastern Wisconsin-southern Upper Peninsula of Michigan	3.6	10	52	38	31
Northeastern Minnesota	3.7	0	64	36	11
All sources	3.3	16	54	30	166

These results add one more bit of evidence of racial variation in red pine and the importance of seed origin. Although certain trends are evident, however, earliness of shoot growth is not a sufficiently constant factor to be of value in determining the probable source of young red pine seedlings of unknown origin. Such a useful diagnostic character remains to be found.

PAUL O. RUDOLF, Forester

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